Amendments to the Drawings:

The attached sheets of drawings include changes to Figs. 3, 6(a), 6(b) and 6(c); Fig. 7; and Fig. 11. These sheets, which include Fig. 3; Figs. 6(a), 6(b) 6(c); Fig. 7; and Fig. 11, replace the original sheets including Fig. 3; Figs. 6(a), 6(b), 6(c); Fig. 7 and Fig. 11. In Fig. 3, the designation "132" has been deleted; in Fig. 6(a), 6(b) and 6(c), reference numeral "70" has been corrected to be "61"; in Fig. 7, reference numeral "70" has been corrected to be "61"; and in Fig. 11, reference numerals "30, 31, 32 and 33" have been corrected to be "50, 51, 52 and 53".

REMARKS

Applicants note that claims 2, 4 and 6 - 12 stand withdrawn from consideration.

By the present amendment, the specification has been amended in a manner which is considered to overcome the objections to the disclosure noted by the Examiner as well as presenting replacement sheets of drawings for Figs. 3, 6, 7 and 11 in which either references numerals have been deleted or changed in accordance with the Examiner's suggestion, noting that the specification has been amended to utilize the appropriate reference numerals. Accordingly, applicants submit that the objection to the specification and the objection to the drawings should now be overcome and applicants request entry of the replacement sheets of drawings.

As to the objection of claim 3, claim 3 has been amended in the manner suggested by the Examiner.

With respect to the rejection of claims 1, 3 and 5, the only claims under consideration in this application at this time, which stand rejected under 35 USC 102(b) as being anticipated by Numata et al (US 6,256,083 B1), this rejection is traversed insofar as it is applicable to the present claims, as amended, and reconsideration and withdrawal of this rejection are respectfully requested.

As to the requirements to support a rejection under 35 USC §102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 USC §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To

establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

In accordance with the present invention, as illustrated in Figs. 2 and 3 of the drawings, for example, coolant liquid is circulated in a closed loop liquid cooling cycle including a pump 129, a radiator 130 and at least one liquid crystal panel 101. Thus, the coolant liquid is circulated within and through the liquid crystal panel having, as illustrated in Figs. 1(a) and 1(b) of the drawings of this application, a flow channel therethrough for the liquid coolant circulating between a surface of a liquid crystal panel and a transparent member to be disposed opposing thereto, respectively, with the flow channel including a high resistance flow channel 6 or 7 which is flat and uniform in thickness thereof, covering a liquid crystal panel area of the liquid crystal panel, and also a buffer portion 10, 11 and 17, 18 adjacent to one of an upstream side and a downstream side of the high-resistance flow channel, the buffer portion being coupled to one of an inlet and outlet of the liquid crystal panel for the coolant circulating therethrough, as represented by the reference numerals 12, 13 and 19, 20, and to the pump 129 and to the radiator 130 to form the closed loop liquid cooling cycle, as illustrated in Figs. 1 and 2 of the drawings of this application. As described in paragraphs [0034] and [0035] of the specification, with the aforementioned structure, a flow rate of the liquid coolant flowing within and through the flat flow channels 6 and 7 of high resistance is proportional to the differences in the pressure and the cross-sectional areas between the upper buffer flow channel

and the lower buffer flow channel so that the flow velocity within the flow channels 6 and 7 of high resistance comes to be constant. In this manner, it is possible to prevent the liquid coolant from generating eddy and/or drifting within an area of the liquid crystal panel surface, while achieving an increase of the velocity of the coolant flowing on the surface of the liquid crystal panel and equalization or uniformity thereof. As described in paragraph [0035], with the circulation of the liquid coolant in the manner described, there is enabled improvement in the quality of the picture while enabling the liquid crystal panel to be cooled down at a higher cooling efficiency.

By the present amendment, each of independent claims 1, 3 and 5 have been amended to clarify the feature of a liquid coolant circulating through the liquid crystal panel in which a pump or driving means and a radiator enables circulation of the liquid coolant within and through the liquid crystal panel in a closed loop liquid cooling cycle in which a buffer portion is coupled to one of an inlet and outlet of the liquid crystal panel for the liquid coolant circulating therethrough, and to the pump or driving means and to the radiator to form the closed loop liquid cooling cycle. Applicants submit that such features as now recited in claims 1, 3 and 5, are not disclosed or taught in the cited art, as will become clear from the following discussion.

In applying Numata et al to the claimed invention, the Examiner contends that Numata et al discloses "a liquid cooling cycle, including the pump (C25, Figs. 5 and 7, for instance) and a radiator (C6 and 19, Figs. 1, 4 - 7, 11, 14 and 15) therein, for circulating a liquid coolant (5, Figs. 1, 4 - 8 and 10 - 15; col. 9, lines 6 - 13) ... said flow channel includes a high-resistance flow channel being flat and uniform in thickness thereof (see channel containing 5 in between 2 and 3b, Fig. 1, for

instance), covering a liquid crystal panel area of said liquid crystal panel, and also a buffer portion formed neighboring to a one upstream side and downstream side of said high-resistance flow channel (see larger areas containing 5 at upstream and downstream sides of high resistance flow channel, Fig. 1, for instance)..." (emphasis added).

Irrespective of the interpretation of Numata et al by the Examiner, applicants submit that Numata et al does not disclose or teach a closed loop liquid cooling cycle, including a pump and a radiator therein, for circulating a liquid coolant within and through a liquid crystal panel, with a flow channel as defined having a buffer portion neighboring one of an upstream side and a downstream side of the high-resistance flow channel, with the buffer portion being coupled to one of an inlet and outlet of the liquid crystal panel for the liquid coolant circulating therethrough, and to the pump and to the radiator to form the closed loop liquid cooling cycle, as recited in claim 1, and as similarly recited in claims 3 and 5. That is, in accordance with the structural arrangement of Numata et al, the liquid coolant 5 is sealed within the structural arrangement of Fig. 1, as described in the paragraph bridging columns 9 and 10 of Numata et al. Thus, irrespective of the Examiner's contentions, Numata et al does not disclose a closed loop liquid cooling cycle nor the circulation of liquid coolant through the liquid crystal panel. Further, with respect to the Examiner's contention that the cooling medium pressure adjusting chamber 25, as illustrated in Fig. 5 represents a pump, applicants submit that such pressure adjusting chamber 25 includes a pressure adjusting bellows 9, which as described in the paragraph at column 10, lines 5 - 11, enables volume change of the cooling medium 5 due to change in temperature to be absorbed by expansion and shrinkage of the pressure adjusting bellows 9, thereby maintaining the pressure of the cooling medium 5

constant. Thus, contrary to the Examiner's position, the chamber 25 and adjusting bellows 9 does not operate as a pump for circulating the cooling medium 5 through the liquid crystal panel in a closed loop liquid cooling cycle, as defined. Moreover, assuming arguendo, that the so-called buffer portion is present, as contended by the Examiner, applicants submit that the so-called buffer portion of Numata et al is not coupled to one of an inlet and outlet of the liquid crystal panel for the liquid coolant circulating therethrough, and to the pump and to the radiator to form the closed loop liquid cooling cycle, as recited in claims 1, 3 and 5 of this application. Accordingly, applicants submit that claims 1, 3 and 5 recite features not disclosed by Numata et al in the sense of 35 USC 102 or rendered obvious from the disclosure or teachings of Numata et al in the sense of 35 USC 103. Thus, applicants submit that claims 1, 3 and 5 should be considered allowable with respect to the disclosure and teachings of Numata et al.

In view of the amendments to the specification and the replacement sheets of drawings, as well as the amendments of claims 1, 3 and 5, applicants submit that claims 1, 3 and 5 now recite features which patentably distinguish over the cited art, and a favorable action with respect to claims 1, 3 and 5 is respectfully requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing

of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 520.45909X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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